In the Claims:

11 ~~23~~. (Six Times Amended) A thin film transistor comprising:

a semiconductor layer formed on an insulating surface;

a channel region formed in said semiconductor layer;

a gate insulating layer contacting said semiconductor layer; and

a gate electrode adjacent to said semiconductor layer with said gate insulating layer therebetween,

L1 wherein said [semiconductor layer] channel region comprises a crystalline silicon semiconductor layer containing oxygen, nitrogen or carbon at a concentration 1×10^{19} atoms/cm^3 or less wherein said [semiconductor layer] channel region shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

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33 ~~25~~. (Six Times Amended) A thin film transistor comprising:

a semiconductor layer formed on an insulating surface;

a channel region formed in said semiconductor layer;

a gate insulating layer contacting said [semiconductor layer] channel region; and

L2 a gate electrode adjacent to said [semiconductor layer] channel region with said gate insulating layer therebetween,

wherein said [semiconductor layer] channel region comprises a crystalline silicon semiconductor layer containing oxygen, nitrogen or carbon at a concentration 1×10^{19} atoms/cm^3 or less and wherein a ratio of a full band width at half maximum (FWHM) of a Raman peak of said [semiconductor

35

cont'd L2

layer] channel region to a FWHM of a Raman peak of a single crystalline silicon is less than 3.

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5. ~~4.~~ (Six Times Amended) A thin film transistor comprising:

a semiconductor layer formed on an insulating surface;

a channel region formed in said semiconductor layer;

a gate insulating layer contacting said [semiconductor layer] channel region; and

L3

a gate electrode adjacent to said [layer] channel region with said gate insulating layer therebetween,

wherein said channel [semiconductor layer] region comprises a crystalline silicon semiconductor layer containing oxygen, nitrogen or carbon at a concentration 1×10^{19} atoms/cm^3 or less and wherein a peak intensity ratio Ia/Ic of said [semiconductor layer] channel region is less than 0.4 where Ia represents a Raman peak intensity at a wavenumber of 480 cm^{-1} for an amorphous component of said [semiconductor layer] channel region and Ic represents a Raman peak intensity at 521 cm^{-1} for a single crystalline silicon.

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7. ~~29.~~ (Twice Amended) The thin film transistor of claim ~~28~~ 5 wherein said [semiconductor layer] channel region comprises a laser annealed crystalline semiconductor layer.

L4

8. ~~30.~~ (Twice Amended) The thin film transistor of claim ~~25~~ 3 wherein said [semiconductor layer] channel region comprises a laser annealed crystalline silicon semiconductor layer.

36

9 5

~~31.~~ (Twice Amended) The thin film transistor of claim ~~27~~ wherein said [semiconductor layer] channel region comprises a laser annealed crystalline silicon semiconductor layer.

10

~~32.~~ (Seven Times Amended) A thin film transistor produced by a process comprising the steps of:

forming on an insulating surface a semiconductor film having a region to become a channel region of the transistor, said [semiconductor film] channel region containing therein carbon, nitrogen or oxygen at a concentration of 1×10^{19} atoms/cm^3 or less, said [semiconductor film] channel region comprising a material selected from the group consisting of germanium and a germanium silicon alloy; and

irradiating said semiconductor film with a laser beam or a light having a strength equivalent to the laser beam with melting the semiconductor film to increase the degree of crystallinity [thereof] of at least said channel region, and

annealing the semiconductor film after the irradiation in a hydrogen atmosphere.

cont'd L4

11

~~33.~~ (Four Times Amended) A thin film transistor comprising:

a semiconductor layer formed on an insulating surface;

a channel region formed in said semiconductor layer;

a gate insulating layer contacting said [semiconductor layer] channel region; and

a gate electrode adjacent to said [semiconductor layer] channel region with said gate insulating layer therebetween;

37

wherein said [semiconductor layer] channel region comprises a non-single crystalline silicon semiconductor layer containing oxygen, carbon or nitrogen at a concentration 1 x 10^{19} atoms/cm^3 or less, which shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

12

~~34.~~ (Five Times Amended) A thin film transistor comprising:

a semiconductor layer formed on an insulating surface;

a channel region formed in said semiconductor layer;

a gate insulating layer contacting said [semiconductor layer] channel region; and

a gate electrode adjacent to said [semiconductor layer] channel region with said gate insulating layer therebetween,

wherein said [semiconductor layer] channel region comprises a non-single crystalline silicon semiconductor layer containing oxygen, carbon or nitrogen at a concentration 1 x 10^{19} atoms/cm^3 or less and wherein a ratio of a full band width at half maximum (FWHM) of a Raman peak of said [semiconductor layer] channel region to a FWHM of a Raman peak of a single crystalline silicon is less than 3.

Contd

L4

13

~~35.~~ (Five Times Amended) A thin film transistor comprising:

a semiconductor layer formed on an insulating surface;

a channel region formed in said semiconductor layer;

a gate insulating layer contacting said [semiconductor layer] channel region; and

a gate electrode adjacent to said [semiconductor layer] channel region with said gate insulating layer therebetween,

38

wherein said [semiconductor layer] channel region comprises a non-single crystalline silicon semiconductor layer containing oxygen, carbon or nitrogen at a concentration 1 x 10^{19} atoms/cm^3 or less and wherein a peak intensity ratio Ia/Ic of said semiconductor layer is less than 0.4 wherein Ia represents a Raman peak intensity at a wavenumber of 480 cm^{-1} for an amorphous component of said [semiconductor layer] channel region and Ic represents a Raman peak intensity at 521 cm^{-1} for a single crystalline silicon.

14

~~36.~~ (Five Times Amended) A thin film transistor produced by a process comprising the steps of:

forming on an insulating surface a semiconductor film having a region to become a channel region of the transistor, said [semiconductor film] channel region containing carbon at a concentration 1 x 10^{19} atoms/cm^3 or less and comprising a material selected from the group consisting of germanium and a germanium silicon alloy; and

irradiating the semiconductor film with a laser beam or a light having a strength equivalent to the laser beam to increase the degree of crystallinity of [the semiconductor film] at least said channel region,

wherein said [semiconductor film] channel region shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

15

~~37.~~ (Five Times Amended) A thin film transistor produced by a process comprising the steps of:

forming on an insulating surface a semiconductor film having a region to become a channel region of the transistor, said [semiconductor film] channel region containing nitrogen at a concentration 1 x 10^{19} atoms/cm^3 or

39

less and comprising a material selected from the group consisting of germanium and a germanium silicon alloy; and

irradiating the semiconductor film with a laser beam or a light having a strength equivalent to the laser beam to increase the degree of crystallinity of [the semiconductor film] at least said channel region,

wherein said [semiconductor film] channel region shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

16

~~38.~~ (Five Times Amended) A thin film transistor produced by a process comprising the steps of:

Cont'd L4

forming on an insulating surface a semiconductor film having a region to become a channel region of the transistor, said [semiconductor film] channel region containing oxygen at a concentration 1 x 10^{19} atoms/cm^3 or less and comprising a material selected from the group consisting of germanium and a germanium silicon alloy; and

irradiating the semiconductor film with a laser beam or a light having a strength equivalent to the laser beam to increase the degree of crystallinity of [the semiconductor film] at least said channel region, wherein said [semiconductor film] channel region shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

17

~~49.~~ (Amended) A thin film transistor comprising:

L5

a semiconductor layer formed on an insulating surface;

a channel region formed in said semiconductor layer;

a gate insulating layer contacting said [semiconductor layer] channel region; and

40

a gate electrode adjacent to said [semiconductor layer] channel region with said gate insulating layer therebetween,

wherein said [semiconductor layer] channel region comprises a material selected from the group consisting of germanium and a germanium silicon alloy, and containing oxygen, nitrogen or carbon at a concentration 1 x 10^{19} atoms/cm^3 or less and wherein said [semiconductor layer] channel region shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

18 1
~~50.~~ (Amended) [A] The thin film transistor according to claim ~~25~~ wherein said semiconductor layer is intrinsic or substantially intrinsic.

19 3
~~51.~~ (Amended) [A] The thin film transistor according to claim ~~25~~ wherein said semiconductor layer is intrinsic or substantially intrinsic.

Cont'd 5

20 5
~~52.~~ (Amended) [A] The thin film transistor according to claim ~~27~~ wherein said semiconductor layer is intrinsic or substantially intrinsic.

21 10
~~53.~~ (Amended) [A] The thin film transistor according to claim ~~32~~ wherein said semiconductor film is intrinsic or substantially intrinsic.

22 11
~~54.~~ (Amended) [A] The thin film transistor according to claim ~~35~~ wherein said semiconductor layer is intrinsic or substantially intrinsic.

23 12
~~55.~~ (Amended) [A] The thin film transistor according to claim ~~34~~ wherein said semiconductor layer is intrinsic or substantially intrinsic.

41

24 13
~~56.~~ (Amended) [A] The thin film transistor according to claim ~~35~~ wherein said semiconductor layer is intrinsic or substantially intrinsic.

25 14
~~57.~~ (Amended) [A] The thin film transistor according to claim ~~36~~ wherein said semiconductor film is intrinsic or substantially intrinsic.

Cont'd 26 15
~~58.~~ (Amended) [A] The thin film transistor according to claim ~~37~~ wherein said semiconductor film is intrinsic or substantially intrinsic.

27 16
~~59.~~ (Amended) [A] The thin film transistor according to claim ~~38~~ wherein said semiconductor film is intrinsic or substantially intrinsic.

Please add new claims 60-66 as follows:

28 1
--~~60.~~ The thin film transistor according to claim ~~23~~ wherein said gate insulating layer comprises a silicon oxide layer directly contacting with said channel region.

29 3
~~61.~~ The thin film transistor according to claim ~~23~~ wherein said gate insulating layer comprises a silicon oxide layer directly contacting with said channel region.

30 5
~~62.~~ The thin film transistor according to claim ~~27~~ wherein said gate insulating layer comprises a silicon oxide layer directly contacting with said channel region.